



**9<sup>th</sup> Annual Shock Wave/Boundary Layer Interaction (SWBLI)  
Technical Interchange Meeting  
May 24-25, 2016 at the Ohio Aerospace Institute (OAI) Cleveland, Ohio  
AGENDA**

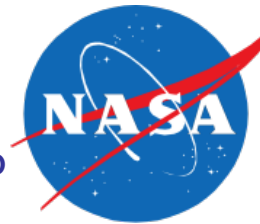


**Morning of Day 1- May 24, 2016 OAI Auditorium:**

Time	Details
8:00- 8:30 am	Coffee, juice and pastries
8:30- 8:35 am	<b>Welcome &amp; Opening Remarks</b> <i>Mary Jo Long-Davis, NASA</i>
8:35- 8:45 am	<b>Motivation and Objectives of Special Session on “Unsteady Flows”</b> <i>Jack Benek, AFRL</i>
8:45- 9:15 am	<b>Data analysis in high Reynolds number turbulent flows- experimental perspective</b> <i>Mo Samimy, The Ohio State University</i>
9:15- 9:45 am	<b>Unsteady data analysis techniques for CFD simulations, and data logistics</b> <i>Datta Gaitonde, The Ohio State University</i>
9:45-10:00 am	<b>BREAK</b>
10:00-10:30 am	<b>On Validation Issues for Unsteady Flows</b> <i>Bill Oberkampf, Consultant</i>
10:30-11:00 am	<b>Analysis of unsteady simulations to inform turbulence modeling</b> <i>Manan Vyas &amp; Jim DeBonis, NASA</i>
11:00am-12:00 pm	<b>PANEL DISCUSSION (Moderator- Manan Vyas):</b> <ul style="list-style-type: none"><li>What are the gaps in the state-of-the-art which are most important to:<ul style="list-style-type: none"><li>Experimental measurement approaches and post-processing tools</li><li>Simulation methods and port-processing tools</li></ul></li></ul> <i>[Tentative panel members include DeBonis, Doty, Gaitonde, Oberkampf, Samimy]</i>
12:00-1:00 pm	<b>LUNCH in the OAI Sunroom</b>



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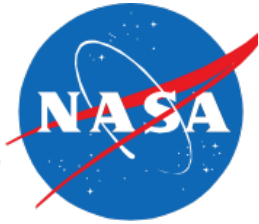


**Afternoon of Day 1- May 24, 2016 OAI Auditorium:**

Time	Details
Real-time entry	Representative from Mondo-Brain company
1:00 – 1:30 pm	<b>Statistical Techniques for unsteady data analysis</b> <i>John Doty, University of Dayton</i>
1:30 – 2:00 pm	<b>Application of wavelet analysis</b> <i>Jacques Lewalle &amp; Pinqing Kan, Syracuse University</i>
2:00 – 2:30 pm	<b>How can efficient time intervals be established for numerical simulations</b> <i>Mori Mani, Boeing</i>
2:30 –2:45 pm	<b>BREAK</b>
2:45 – 3:15 pm	<b>Unsteady analysis using large computational datasets</b> <i>Nick Bisek, AFRL</i>
3:15 – 4:15 pm	<b>PANEL DISCUSSION (Moderator- Jack Benek):</b> <ul style="list-style-type: none"><li><i>What are the gaps in the state-of-the-art which are most important to the logistics and limitations associated with high performance computing architectures?</i></li><li><i>How to close the gap between experiments (which can afford high temporal resolution and low spatial resolution) and simulations (which can typically afford high spatial resolution and lower temporal resolution)?</i></li></ul> <i>[Tentative panel members include Bisek, DeBonis, Lewalle, Mani]</i>
4:15-4:30 pm	<b>WRAP-UP &amp; ADJOURN</b>
6:00 pm	<b>No-Host Dinner at 100<sup>th</sup> Bomb Group Restaurant</b> <b>20920 Brookpark Road; Cleveland, OH 44135</b>



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**Day 2- May 25, 2016 OAI Auditorium:**

<b>Time</b>	<b>Details</b>
<b>8:00 - 8:30 am</b>	<b>CHECK-IN and Coffee, juice, pastries</b>
<b>8:30 – 9:00 am</b>	<b>Ongoing AFRL Supersonic Inlet Integration Research</b> <i>Jon Tinapple, AFRL</i>
<b>9:00 – 9:30 am</b>	<b>High Speed Aerodynamics at AFOSR</b> <i>Ivett Leyva, Air Force Office of Scientific Research</i>
<b>9:30 –10:00 am</b>	<b>The Statistical Nature of Unsteady Inlet Flows</b> <i>Bernie Anderson, NASA Distinguished Research Associate</i>
<b>10:00-10:15 am</b>	<b>BREAK</b>
<b>10:15-10:45 am</b>	<b>LES and Tensor Analysis on Vortex Ring and Shock Interaction in Boundary Layer</b> <i>Chaoqun Liu, University of Texas at Arlington</i>
<b>10:45-11:15 am</b>	<b>Application of Hybrid RANS-LES to Unsteady Shock-Wave Boundary Layer Interactions in the Presence of a Surface Mounted Proturberance</b> <i>Kader Frendi &amp; Phil Ligrani, University of Alabama in Huntsville</i>
<b>11:15-11:45 am</b>	<b>New Experimental Wind Tunnel Research Capabilities at UAH for Investigation of Shock-Wave-Boundary-Layer-Interactions</b> <i>Phil Ligrani &amp; Kader Frendi, University of Alabama in Huntsville</i>
<b>Noon-1:00 pm</b>	<b>LUNCH in the OAI Sunroom</b>
<b>1:00 – 1:15 pm</b>	<b>Dimensional analysis on SWBLI flows in rectangular test sections</b> <i>Mark McQuilling, Saint Louis University</i>
	<b>Axisymmetric SWBLI validation experiment-request for input from CFD community</b> <i>Dave Davis, NASAA</i>
<b>1:15 – 1:45 pm</b>	<b>Use of Vortex Generators to Reduce Distortion for Mach 1.6 Streamline-Traced Supersonic Inlets</b> <i>Ezgihan Baydar and Frank Lu, University of Texas at Arlington, John Slater, Chuck Trefny and Dennis Yoder, NASA</i>
<b>1:45 – 2:15 pm</b>	<b>Shock train unsteadiness and dynamics</b> <i>Mirko Gamba, University of Michigan</i>



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2:15 – 2:45 pm	<b>Miniaturized Parametric Inlet Bleed Module with Integrated Discretized Flow Control</b> <i>George Papdopoulos, Innoveering</i>
2:45 – 3:00 pm	<b>Day 2 Wrap-up and ADJOURN</b>